CLAIMS

1. A method of setting the pressure in a chamber of a vacuum system to a required pressure, the system comprising a pressure control system including a pump for evacuating gas from the chamber and a flow controller for allowing the flow of gas into the chamber, the method comprising setting an initial flow out of the chamber for achieving a pressure above the required pressure so as to increase the rate of pressure increase, the initial flow occurring over a transient period which does not allow the pressure to exceed the required pressure, and setting a preset flow out of the chamber after the transient period has elapsed for achieving and maintaining the required pressure.

2. A method according to Claim 1, wherein the transient period elapses when the pressure has increased to the required pressure and the preset flow maintains the pressure at the required pressure.

3. A method according to Claim 1 or 2, wherein the preset flow is attained by setting the effective pumping speed of the pressure control system to a preset effective pumping speed, and the initial flow is attained by setting the effective pumping speed lower than the preset pumping speed during the transient period.

4. A method according to Claim 3, wherein the effective pumping speed is controlled by reducing the speed of the pump.

5. A method according to Claim 4, wherein the preset flow is attained by setting a preset speed of the pump and the initial flow is attained by reducing the speed below the preset speed during the transient period.

6. A method according to Claim 3, wherein a valve controls the flow of gas out of the chamber, and the effective pumping speed is controlled by controlling the conductance of the valve.

7. A method according to Claim 6, wherein the preset flow is attained by setting a preset conductance of the valve and the initial flow is attained by reducing the conductance below the preset conductance during the transient period.

8. A method according to Claim 6 or 7, wherein the valve is positioned up-stream or downstream of the pump.

9. A method according to Claim 6 or 7, wherein the pump comprises a high vacuum pump and a backing pump and the valve is between the two pumps.

10. A method according to any preceding claim, wherein the flow controller varies the flow of gas into the chamber during the transient period.

11. A method according to any preceding claim, wherein a purge gas controller introduces gas into the pump during the transient period.

12. A method according to any of Claims 1 to 10, wherein a purge gas controller introduces gas into the vacuum system up-stream of the pump during the transient period.

13. A method according to any preceding claim, wherein, during the transient period, the pump speed is reduced so that the amount of gas which leaks up-stream across the pump increases, thereby increasing the gas flowing into the chamber.

14. A method according to any preceding claim, wherein during the transient period the initial flow is maintained at a constant level for a fixed time.

15. A method according to any preceding claim, wherein during the transient period the initial flow is not maintained at a constant level.